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Project Title

**DESIGN AND DEVELOPMENT OF BENDING AND
COMPRESSION TEST APPARATUS AND PARAMETRIC ANALYSIS
ON ABS MATERIAL.**

Abstract:

Testing machine is one of the oldest methods for testing strength of different material to design & analysis purpose. Than oldest testing machine in lots of problems such as do not provides information about the material at different temperatures, don't identify the strength in material at differing strain rates, don't accurate measurements use dial gauge output device. New Existing advance Universal testing machine which is used to measure the strength of a various parts, But in this project due to small and portable testing machine, we only measure the strength of aluminum and PLA plastic specimens. Implementation new small advance Universal testing machine in output of device computer interference during test generate stress- strain graph. From stress-strain relations among to find the different mechanical properties like ultimate tensile strength, elasticity, yield strength, young's modulus of elasticity; percentage elongation and Poisson's ratio can be obtained. That also other properties find the true stress- strain properties, strain hardening and tensile toughness can be calculated by means of using special equations from the stress-strain curve. Than market available tensile testing machines high load and heavy duty machines have not accurate results on sometimes but in our project small purpose machine have light in weight, low cost and high accuracy working. If be small advance testing machines develop are relative typically used in a colleges, industries and research development lab to measure tensile, Bending strength. Elastic properties also may be of interest, but special techniques must be used to measure these properties during tensile, compression, bending testing and more accurate measurements with high accuracy tensile, compression and bending testing the specimens. Than main important components in testing machine to measure the high accuracy measurements such as test gripper and crosshead. So, these machine in accurate design in some important components and measured the accurate results.

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